

REMARKS

Applicant responds hereby to the outstanding Office Action dated July 11, 2007.

A Petition For Extension of Time accompanies this Amendment to extend the time for applicant's response, up to and including January 11, 2008. Applicant has amended claims 1, and 12, hereby. Claims 1-14 are pending hereinafter, where claims 1 and 12 are the independent claims. Reconsideration in view of the amendments to independent claims 1 and 12 is respectfully solicited.

In the Office Action, the Examiner has rejected claims 1, 2 and 4-13 under 35 USC §102(b) as anticipated by US Patent No. 6,139,561, to Shibata, et al. ("Shibata"). To support the section 102(b) rejections, the Examiner asserts that Shibata'a Figs. 1-12 and 15-28 disclose an ultrasonic probe 5, ultrasonic transducer/oscillator 3, moveable jaw 10, and moveable handle 8, which moveable handle is asserted to be arranged on the same side as moveable jaw 10 with respect to the central longitudinal axis of the main body 6. The Examiner asserts further that Shibata includes a cord 9 connecting the ultrasonic transducer/oscillator 3 to a drive circuit (not shown), a sheath 7 and a body 6.

In addition, the Examiner has rejected dependent claims 3 and 14 under 35 USC §103(a) as unpatentable over Shibata. To support the Section 103(a) rejection, the Examiner asserts that while Shibata does not disclose a drive circuit as recited by claims 3 and 14, that the recited drive circuit is well known in the art, and that it would have been obvious to modify Shibata to include such a drive circuit because the drive circuit as claimed is well-known, and is suitable for an ultrasonic device, such as the device of Shibata.

Response To Rejections Under 35 USC 102(b)

Applicant respectfully asserts that claims 1, 2 and 4-13 are patentably distinct from Shibata. Before explaining the patentable differences between applicant's invention as claimed, and Shibata, applicant first provides a general description of the invention with respect to Figs. 1-5.

Fig. 1 shows ultrasonic treatment device 1 comprising ultrasonic treatment instrument 2 and foot switch 3 connected to device console 1A. The ultrasound treatment instrument comprises a treatment unit 5 at a distal end of elongate sheath 4 and a manipulating section 6. The manipulating section 6 incorporates an ultrasonic transducer and operating handle 8. Figs. 3 and 4 depict the ultrasonic treatment device instrument 2 as a handle unit 31, a probe unit 32 and transducer unit 33. The handle unit 31 comprises a sheath 4 and manipulating section 6. At a proximal end of manipulating section (main body 6a) is a transducer connecting unit 6b. The manipulating section also contains a fixed handle 42, and moveable handle 43, where the moveable handle is freely rotatable as supported by **pivot shaft 45**, and constitutes control means. At the distal end of the moveable handle 43, the proximal end of a **moveable jaw 50** is connected by **cam mechanism 51**.

The fixed handle 42 is integrally formed with cylindrical manipulating section main body 6a. A manipulating end of the fixed handle 42 includes finger holes 42a, where the moveable handle 43 includes finger hole 43a. The moveable handle is freely rotatable by pivot shaft 45 at the peripheral surface of body 6a. At the distal end of the moveable handle 43, the

proximal end of moveable jaw 50 is connected by a cam mechanism 51. The moveable jaw is freely rotatable supported by a pivot shaft 52 at the peripheral surface of manipulating section main body 6a. The moveable handle 43 and moveable jaw 50 are arranged on the same side of the longitudinal central axis 53 of manipulating section 6.

When the ultrasonic treatment instrument 2 performs a closure operation on moveable handle 43, upwardly directed force is applied at the distal end of the moveable handle, by using pivot shaft 45 as a fulcrum, and upwardly directed force is applied to the proximal end of moveable jaw 50, that is connected to the cam mechanism 51. Thus, downward directed force is applied to the distal end of moveable jaw 50 by using pivot shaft 52 as a fulcrum, effecting closure with the treatment portion. Force in the vertical direction is then applied to the pivot shaft 52 of moveable jaw 50 by action of cam mechanism 51 by manipulation of moveable handle 43. This shows a marked improvement in clamping ability, and control of the living tissue to which the ultrasonic therapy is applied.

Claim 1, as amended, calls out one embodiment of applicant's ultrasonic treatment device comprising:

an ultrasonic probe for treating living-body tissue by transmitting thereto ultrasonic vibrations generated by means of an ultrasonic transducer;

a manipulating section main body at a fixed side wherein the ultrasonic probe is inserted and arranged at the distal end thereof;

a moveable jaw, arranged opposite to the ultrasonic probe, that grips living-body tissue with the ultrasonic probe, and that is supported to freely rotate about a first pivot shaft at the peripheral surface of the manipulating section main body; and

a moveable handle linked with the moveable jaw for opening/closure operation of the moveable jaw with respect to the ultrasonic probe and supported to freely rotate about a second pivot shaft at the peripheral surface of the manipulating section main body, wherein the moveable jaw and the moveable handle are arranged on the same side with respect to the longitudinal central axis of the manipulating section main body.

Shibata is distinguishable from applicant's invention including the claim 1 ultrasonic treatment device. Shibata shows in Figs. 1a-1c an ultrasonic medical instrument for ultrasonic treatment including handpiece 1, comprising ultrasonic medial treatment main body, or gripping section 2. Oscillator 3 is provided in the gripping section at a proximal end of horn 4, a distal end of which is connected to probe section 5. The gripping section also includes a substantially cylindrical oscillator cover 6. A substantially L-shaped section 8, i.e., an arm section, is secured at its proximal end to a closure plate 6c. The arm section 8 includes a clamp member 10 opposed to the distal end of the probe section 5, and arm main body 11 extending from the proximal end of clamp member 10. A stopper 13 is protruded inward from an inner surface of arm body 11. When the arm section and gripping section are squeezed, the clamp member 10 of arm section 8 to approach the probe section 5, holding living tissue therebetween.

Figs. 2-4 show an alternative embodiment in which the hand piece 1 of the above-described embodiment is modified with a rotatable pin 21 provided on an outer surface of casing

7 of the hand piece (1), so that y-shaped arm section 22 can rotate about the pin 21. Arm section 22 is described as comprising two branches 22a and 22b. Arm section 22 rotates about rotatable pin 21. A substantially linear clamp support arm 22c is provided at the distal end side of arm section 22 such that it extends between the two branches, 22a, and 22b. Arm section 22 is gripped to make ringhandles 23 and 25 approach each other, rotating about rotatable pin 21. Using rotating pin 21 as a fulcrum, force is directed from clamp member 24 to probe section 5, clamping or holding living tissue therebetween.

Applicant's invention as claimed is a significant improvement over the Shibata medical instrument, particularly with respect to applicant's use of a moveable jaw and movable handle. Applicant's moveable handle, such as handle 43 in Fig. 3, cooperates with his moveable jaw, such as 50 in Fig. 3. The moveable jaw is supported to freely rotate about a first pivot pin such as pivot shaft (pin) 52 of Fig. 3. The moveable handle is linked with the moveable jaw for opening/closure operation and supported to freely rotate about a second pivot pin, such as pivot shaft (pin) 45 of Fig. 3. The force applied to the moveable handle during a closure operation using the first pivot pin as a fulcrum, thereby providing upwardly directed force at a proximal end of the moveable jaw. The linking provides that downwardly directed force is applied to the distal end of moveable jaw 52 using the second pivot shaft as a fulcrum, thereby effecting closure.

Applicant's treatment device of claim 1, including a moveable jaw and a moveable handle, both arranged to rotate freely about first and second pivot pins, is structurally and functionally distinct from Shibata. Shibata's arm section 22 includes two branches 22a and

22b, at proximal and distal ends with respect to pivot pin 21, respectively, which is essentially one integral unit. The clamp member 24 is compelled to apply a force directed to probe section 5, through pivot pin 21 when an operator applies closing force to ringhandle 23 (through branch 22a) and ringhandle 25. The Shibata arm section construction does not include both a moveable handle and moveable jaw, each connected to the manipulating section and linked to effectively and efficiently grip or clamp living tissue, still less where the moveable jaw and moveable handle are arranged on the same side with respect to the longitudinal central axis of the manipulating section main body.

For that matter, while the Examiner states that Shibata's moveable jaw 10 is on the same side as moveable handle 8, this is only with respect to Shibata's Figs. 1a, 1b, 1c, in which moveable jaw 10 is the same structure of arm 8, but there is no pivot pin connecting either moveable jaw 10 or arm 8 to main body 6. In any of the Shibata embodiments that include a pivot pin (21) to translate an arm section-applied force to force the clamp member 10 against the probe section, the arm section is arranged on the other side of the clamp member with respect to the central longitudinal axis of the main body.

Hence, Shibata fails to disclose a moveable jaw, arranged opposite to the ultrasonic probe, that grips living-body tissue with the ultrasonic probe, and that is supported to freely rotate about a first pivot shaft at the peripheral surface of the manipulating section main body; and a moveable handle linked with the moveable jaw for opening/closure operation of the moveable jaw with respect to the ultrasonic probe and supported to freely rotate about a second pivot shaft at the peripheral surface of the manipulating section main body, wherein the

moveable jaw and the moveable handle are arranged on the same side with respect to the longitudinal central axis of the manipulating section main body.

Applicant, therefore, respectfully asserts that Shibata does not include each of the elements of applicant's independent claims 1 and 12, which are therefore patentable under Section 102(b) in view of Shibata. Claims 2 and 6-11 depend from claim 1 and are patentable therewith, and claim 13 depends from claim 12 and is patentable therewith. Hence, applicants respectfully request withdrawal of the rejection of claims 1, 2 and 4-13 under section 102(b) in view of Shibata.

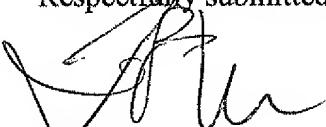
Rejections Under 35 USC §103(a)

To support the Section 103(a) rejection of claims 3 and 14 in view of Shibata, the Examiner asserts that while Shibata does not disclose a drive circuit as recited by claims 3 and 14, that the recited drive circuit is well known in the art, and claims 3 and 14 are therefore unpatentable. Applicant respectfully asserts, however, that claims 1 and 12 from which claims 3 and 14 respectively depend are patentable and readily distinguishable from Shibata as set forth above. Hence adding a drive unit of claims 3 and 14 to Shibata would not realize an ultrasonic treatment device as set forth in respective claims 3 and 14 for at least the reasons set forth above for the patentability of claims 1 and 12 in view of Shibata under section 102(b). Applicant, therefore, respectfully requests that the rejection of claims 3 and 14 under section 103(a) over Shibata be withdrawn.

Conclusion

It follows that each of pending claims 1-14 are patentably distinct from Shibata, whether under Section 102(b) or under Section 103(c). If the Examiner believes that a telephone conference with applicant's attorneys would be advantageous to the disposition of this case, the Examiner is asked to telephone the undersigned.

Respectfully submitted,



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